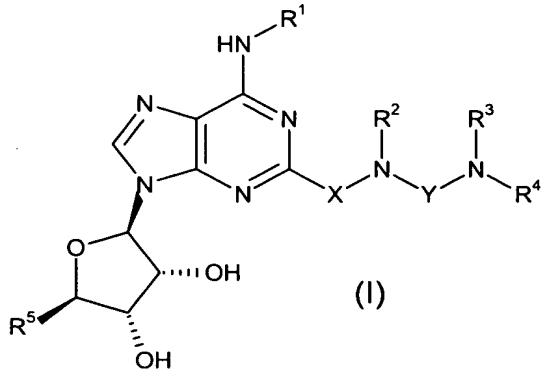
CLAIMS

1. A compound of the formula



(I)

or a pharmaceutically acceptable salt or solvate thereof, wherein

R^1 is (i) H, (ii) C_1-C_6 alkyl optionally substituted by 1 or 2 substituents each independently selected from phenyl, naphthyl and fluorenyl, said phenyl, naphthyl and fluorenyl being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano, or (iii) fluorenyl;

R^2 is H or C_1-C_6 alkyl;

either, R^3 and R^4, taken together with the nitrogen atom to which they are attached, represent azetidinyl, pyrrolidinyl, piperidinyl, piperazinyl, homopiperidinyl or homopiperazinyl, each being optionally substituted on a ring nitrogen or carbon atom by C_1-C_6 alkyl or C_3-C_8 cycloalkyl and optionally substituted on a ring carbon atom not adjacent to a ring nitrogen atom by

$-NR^6R^7$ or $-OR^9$,

or, R^3 is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or benzyl, said C_1-C_6 alkyl being optionally substituted by C_3-C_8 cycloalkyl, and R^4 is

(a) C_1-C_6 alkyl, C_3-C_8 cycloalkyl or R^{15}, said C_1-C_6 alkyl being optionally substituted by R^{15}; or

(b) -(C_2-C_6 alkylene)-R^8, or

(c) -(C_1-C_6 alkylene)-R^{13};

R^5 is $-CH_2OH$ or $-CONR^{14}R^{14}$;

R^6 and R^7 are either each independently H or C_1-C_6 alkyl or, taken together with the nitrogen atom to which they are attached, represent azetidinyl, pyrrolidinyl or piperidinyl, said azetidinyl, pyrrolidinyl and piperidinyl being optionally substituted by C_1-C_6 alkyl;

R^8 is (i) azetidin-1-yl, pyrrolidin-1-yl, piperidin-1-yl, morpholin-4-yl, piperazin-1-yl, homopiperidin-1-yl, homopiperazin-1-yl or tetrahydroisoquinolin-1-yl, each being optionally substituted on a ring carbon atom by C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, C_1-C_6 alkoxy-(C_1-C_6)-alkyl, R^9R^9N-(C_1-C_6)-alkyl, fluoro-(C_1-C_6)-alkyl, $-CONR^9R^9$, $-COOR^9$ or C_2-C_5 alkanoyl,

optionally substituted on a ring carbon atom not adjacent to a ring nitrogen atom by fluoro-(C_1-C_6)-alkoxy, halo,

-OR^9, cyano, -$S(O)_mR^{10}$, -NR^9R^9, -$SO_2NR^9R^9$, -NR^9COR^{10} or -$NR^9SO_2R^{10}$ and optionally benzo-fused, and said piperazin-1-yl and homopiperazin-1-yl being optionally substituted on the ring nitrogen atom not attached to the C_2-C_6 alkylene group by C_1-C_6 alkyl, phenyl, C_1-C_6 alkoxy-(C_2-C_6)-alkyl, R^9R^9N-(C_2-C_6)-alkyl, fluoro-(C_1-C_6)-alkyl, C_2-C_5 alkanoyl, -$COOR^{10}$, C_3-C_8 cycloalkyl, -SO_2R^{10},

-$SO_2NR^9R^9$ or -$CONR^9R^9$, or

(ii) -$NR^{11}R^{12}$;

R^9 is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or phenyl;

R^{10} is C_1-C_6 alkyl, C_3-C_8 cycloalkyl or phenyl;

R^{11} is C_1-C_6 alkyl, C_3-C_8 cycloalkyl or benzyl;

R^{12} is C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, benzyl, fluoro-(C_1-C_6)-alkyl, -$CONR^9R^9$, -$COOR^{10}$, -COR^{10}, -SO_2R^{10} or -$SO_2NR^9R^9$, said C_1-C_6 alkyl being optionally substituted by phenyl;

R^{13} is phenyl, pyridin-2-yl, pyridin-3-yl or pyridin-4-yl, each being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano;

R^{14} is H or C_1-C_6 alkyl optionally substituted by cyclopropyl;

R^{15} is azetidin-3-yl, pyrrolidin-3-yl, piperidin-3-yl, piperidin-4-yl, homopiperidin-3-yl or homopiperidin-4-yl, each being optionally substituted by R^{13}, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or benzyl;

m is 0, 1 or 2;

X is -CH_2- or -CH_2CH_2-; and

Y is CO, CS, SO_2 or C=N(CN).

2. A compound of the formula (I), as defined in claim 1, wherein

R^1 is H, C_1-C_6 alkyl or fluorenyl, said C_1-C_6 alkyl being optionally substituted by 1 or 2 substituents each independently selected from phenyl and naphthyl, said phenyl and naphthyl being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano;

R^2 is H or C_1-C_6 alkyl;

either, R^3 and R^4, taken together with the nitrogen atom to which they are attached, represent azetidinyl, pyrrolidinyl, piperidinyl, piperazinyl, homopiperidinyl or homopiperazinyl, each being optionally substituted on a ring nitrogen or carbon atom by C_1-C_6 alkyl or C_3-C_8 cycloalkyl and optionally substituted on a ring carbon atom not adjacent to a ring nitrogen atom by

-NR^6R^7,

or, R^3 is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or benzyl and R^4 is

(a) azetidin-3-yl, pyrrolidin-3-yl, piperidin-3-yl, piperidin-4-yl, homopiperidin-3-yl or homopiperidin-4-yl, each being optionally substituted by C_1-C_6 alkyl, C_3-C_8 cycloalkyl or benzyl, or

(b) -(C_2-C_6 alkylene)-R^8, or

(c) -(C_1-C_6 alkylene)-R^{13};

R^5 is $-CH_2OH$ or $-CONR^{14}R^{14}$;

R^6 and R^7 are either each independently H or C_1-C_6 alkyl or, taken together with the nitrogen atom to which they are attached, represent azetidinyl, pyrrolidinyl or piperidinyl, said azetidinyl, pyrrolidinyl and piperidinyl being optionally substituted by C_1-C_6 alkyl;

R^8 is (i) azetidin-1-yl, pyrrolidin-1-yl, piperidin-1-yl, morpholin-4-yl, piperazin-1-yl, homopiperidin-1-yl, homopiperazin-1-yl or tetrahydroisoquinolin-1-yl, each being optionally substituted on a ring carbon atom by C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, C_1-C_6 alkoxy-(C_1-C_6)-alkyl, R^9R^9N-(C_1-C_6)-alkyl, fluoro-(C_1-C_6)-alkyl, $-CONR^9R^9$, $-COOR^9$ or C_2-C_5 alkanoyl, and optionally substituted on a ring carbon atom not adjacent to a ring nitrogen atom by fluoro-(C_1-C_6)-alkoxy, halo,

$-OR^9$, cyano, $-S(O)_mR^{10}$, $-NR^9R^9$, $-SO_2NR^9R^9$, $-NR^9COR^{10}$ or $-NR^9SO_2R^{10}$, and said piperazin-1-yl and homopiperazin-1-yl being optionally substituted on the ring nitrogen atom not attached to the C_2-C_6 alkylene group by C_1-C_6 alkyl, phenyl, C_1-C_6 alkoxy-(C_2-C_6)-alkyl, R^9R^9N-(C_2-C_6)-alkyl, fluoro-(C_1-C_6)-alkyl, C_2-C_5 alkanoyl, $-COOR^{10}$, C_3-C_8 cycloalkyl, $-SO_2R^{10}$, $-SO_2NR^9R^9$ or $-CONR^9R^9$, or

(ii) $-NR^{11}R^{12}$;

R^9 is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or phenyl;

R^{10} is C_1-C_6 alkyl, C_3-C_8 cycloalkyl or phenyl;

R^{11} is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or benzyl;

R^{12} is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, benzyl, fluoro-(C_1-C_6)-alkyl, $-CONR^9R^9$, $-COOR^{10}$, C_2-C_5 alkanoyl or $-SO_2NR^9R^9$;

R^{13} is phenyl, pyridin-2-yl, pyridin-3-yl or pyridin-4-yl, each being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano;

R^{14} is H or C_1-C_6 alkyl optionally substituted by cyclopropyl;

m is 0, 1 or 2;

X is $-CH_2-$ or $-CH_2CH_2-$; and

Y is CO, CS, SO_2 or C=N(CN).

3. A compound as claimed in claim 1 wherein R^1 is C_1-C_6 alkyl optionally substituted by 1 or 2 substituents each independently selected from phenyl, naphthyl and fluorenyl, said phenyl, naphthyl and fluorenyl being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano.

4. A compound as claimed in claim 3 wherein R^1 is 2,2-diphenyleth-1-yl, 2,2-di(4-chlorophenyl)eth-1-yl, 2,2-di(3-chlorophenyl)eth-1-yl, 2,2-di(4-methylphenyl)eth-1-yl, 2,2-di(3-methylphenyl)eth-1-yl, naphth-1-ylmethyl or fluoren-9-ylmethyl.

5. A compound as claimed in claim 1 or claim 2 wherein R^2 is H or C_1-C_4 alkyl.

6. A compound as claimed in claim 5 wherein R^2 is H or methyl.

7. A compound as claimed in claim 1 or claim 2 wherein R^3 is H or C_1-C_6 alkyl.

8. A compound as claimed in claim 7 wherein R^3 is H or methyl.

9. A compound as claimed in claim 1 wherein R^4 is (a) C_1-C_4 alkyl substituted by -R^{15}, C_3-C_6 cycloalkyl or -R^{15}; or (b) -(C_2-C_4 alkylene)-R^8, or (c) -(C_1-C_4 alkylene)-R^{13}.

10. A compound as claimed in claim 9 wherein R^4 is -CH_2R^{15}, cyclohexyl, -R^{15}, -$CH_2CH_2R^8$, -CH_2R^{13} or -$CH_2CH_2R^{13}$.

11. A compound as claimed in claim 1 or claim 2 wherein R^5 is -CH_2OH or -CONH(C_1-C_6 alkyl).

12. A compound as claimed in claim 11 wherein R^5 is -CH_2OH or -$CONHCH_2CH_3$.

13. A compound as claimed in claim 1 wherein R^8 is (i) piperidin-1-yl, optionally substituted on a ring carbon atom by C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, C_1-C_6 alkoxy-(C_1-C_6)-alkyl, R^9R^9N-(C_1-C_6)-alkyl, fluoro-(C_1-C_6)-alkyl,

-$CONR^9R^9$, -$COOR^9$ or C_2-C_5 alkanoyl, optionally substituted on a ring carbon atom not adjacent to a ring nitrogen atom by fluoro-(C_1-C_6)-alkoxy, halo, -OR^9, cyano, -$S(O)_mR^{10}$, -NR^9R^9, -$SO_2NR^9R^9$, -NR^9COR^{10} or -$NR^9SO_2R^{10}$ and optionally benzo-fused, or (ii) -$NR^{11}R^{12}$.

14. A compound as claimed in claim 13 wherein R^8 is piperidin-1-yl, 4-(2-propyl)piperidin-1-yl, 2,2,6,6-tetramethylpiperidin-1-yl, 1,2,3,4-tetrahydroisoquinolin-2-yl or -$NR^{11}R^{12}$.

15. A compound as claimed in claim 1 or claim 2 wherein R^{11} is C_1-C_6 alkyl or C_3-C_8 cycloalkyl.

16. A compound as claimed in claim 15 wherein R^{11} is -$CH(CH_3)_2$, -$CH_2CH_2CH_2CH_3$, -$CH_2CH(CH_3)_2$, -$C(CH_3)_3$, -$CH(CH_2CH_3)_2$, cyclohexyl or cyclopentyl.

17. A compound as claimed in claim 1 wherein R^{12} is C_1-C_6 alkyl, C_3-C_8 cycloalkyl, -COR^{10} or -SO_2R^{10} said C_1-C_6 alkyl being optionally substituted by phenyl.

18. A compound as claimed in claim 17 wherein R^{12} is -$CH(CH_3)_2$, -$CH_2CH_2CH_2CH_3$, -$CH_2CH(CH_3)_2$, -$C(CH_3)_3$, -$CH(CH_2CH_3)_2$, -$C(CH_3)_2Ph$, -SO_2Ph, -COPh, cyclohexyl or cyclopentyl.

19. A compound as claimed in claim 1 or claim 2 wherein R^{13} is phenyl or pyridin-2-yl, each being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano.

20. A compound as claimed in claim 18 wherein R^{13} is phenyl or pyridin-2-yl.

21. A compound as claimed in claim 1 wherein R^{15} is pyrrolidin-3-yl or piperidin-4-yl, each being optionally substituted by R^{13}, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or benzyl.

22. A compound as claimed in claim 21 wherein R^{15} is 1-benzyl-piperidin-4-yl, (1-benzyl-piperidin-4-yl)methyl, 1-(2-pyridinyl)piperidin-4-yl, or 1-benzyl-pyrrolidin-3-yl.

23. A compound as claimed in claim 1 or claim 2 wherein X is $-CH_2-$.

24. A compound as claimed in claim 1 or claim 2 wherein Y is CO or C=N(CN).

25. A compound as claimed in claim 1 which is selected from the group consisting of:

N-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)-*N'*-[2-(diisopropylamino)ethyl] urea;

N-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)-*N'*-[2-(1-piperidinyl)ethyl]urea;

(2*S*,3*S*,4*R*,5*R*)-5-{2-{[({[2-(diisopropylamino)ethyl]amino}carbonyl)amino] methyl}-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-(6-[(2,2-diphenylethyl)amino]-2-{[({[2-(1-piperidinyl)ethyl] amino}carbonyl)amino]methyl}-9*H*-purin-9-yl)-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-{2-{[((*E*)-(cyanoimino){[2-(1-piperidinyl)ethyl]amino} methyl)amino]methyl}-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-{2-({[(benzylamino)carbonyl]amino}methyl)-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-{2-({[(cyclohexylamino)carbonyl]amino}methyl)-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-{2-({[({2-[benzoyl(isopropyl)amino]ethyl}amino)carbonyl] amino}methyl)-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-[6-[(2,2-diphenylethyl)amino]-2-({[({2-[isopropyl(phenylsulfonyl)amino]ethyl}amino)carbonyl]amino}methyl)-9*H*-purin-9-yl]-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

N'-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)-*N*-methyl-*N*-[2-(2-pyridinyl) ethyl]urea;

(2*S*,3*S*,4*R*,5*R*)-5-{2-[({[(1-benzyl-4-piperidinyl)amino]carbonyl}amino)methyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-[6-[(2,2-diphenylethyl)amino]-2-({[({2-[(1-ethylpropyl)(isobutyl)amino]ethyl}amino)carbonyl]amino}methyl)-9*H*-purin-9-yl]-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

N-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)-*N'*-{2-[(1-ethylpropyl)(isobutyl)amino]ethyl}urea;

N-[2-(3,4-dihydro-2(1*H*)-isoquinolinyl)ethyl]-*N'*-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)urea;

(2*S*,3*S*,4*R*,5*R*)-5-{2-{[({[2-(3,4-dihydro-2(1*H*)-isoquinolinyl)ethyl]amino}carbonyl)amino]methyl}-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-{2-{[({[2-(dibutylamino)ethyl]amino}carbonyl)amino]methyl}-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-{2-({[({2-[cyclopentyl(isopropyl)amino]ethyl}amino)carbonyl]amino}methyl)-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

N-{2-[cyclopentyl(isopropyl)amino]ethyl}-*N'*-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)urea;

(2*S*,3*S*,4*R*,5*R*)-5-(6-[(2,2-diphenylethyl)amino]-2-{[({[1-(2-pyridinyl)-4-piperidinyl]amino}carbonyl)amino]methyl}-9*H*-purin-9-yl)-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-(6-[(2,2-diphenylethyl)amino]-2-{[methyl({[2-(1-piperidinyl)ethyl]amino}carbonyl)amino]methyl}-9*H*-purin-9-yl)-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-{2-({[({2-[*tert*-butyl(cyclohexyl)amino]ethyl}amino)carbonyl]amino}methyl)-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

N-{2-[*tert*-butyl(cyclohexyl)amino]ethyl}-*N'*-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)urea;

N-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)-*N'*-[1-(2-pyridinyl)-4-piperidinyl]urea;

N-[(1-benzyl-4-piperidinyl)methyl]-*N'*-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)urea;

N-[(1-benzyl-4-piperidinyl)methyl]-*N'*-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)urea;

(2*S*,3*S*,4*R*,5*R*)-5-[6-[(2,2-diphenylethyl)amino]-2-({[({2-[isopropyl(1-methyl-1-phenylethyl)amino]ethyl}amino)carbonyl]amino}methyl)-9*H*-purin-9-yl]-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

N-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)-*N'*-{2-[isopropyl(1-methyl-1-phenylethyl)amino]ethyl}urea;

N-[2-(dicyclopentylamino)ethyl]-*N'*-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)urea;

N-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(9*H*-fluoren-9-ylmethyl)amino]-9*H*-purin-2-yl}methyl)-*N'*-[2-(diisopropylamino) ethyl]urea;

N-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)-*N'*-[2-(2,2,6,6-tetramethyl-1-piperidinyl)ethyl]urea;

(2*S*,3*S*,4*R*,5*R*)-5-(6-[(2,2-diphenylethyl)amino]-2-{[({[2-(4-isopropyl-1-piperidinyl)ethyl]amino}carbonyl)amino]methyl}-9*H*-purin-9-yl)-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-(6-[(2,2-diphenylethyl)amino]-2-{[({[2-(2,2,6,6-tetramethyl-1-piperidinyl)ethyl]amino}carbonyl)amino]methyl}-9*H*-purin-9-yl)-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

N-[(3*R*)-1-benzylpyrrolidinyl]-*N'*-({9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purin-2-yl}methyl)urea;

(2*S*,3*S*,4*R*,5*R*)-5-{2-{[({[(3*R*)-1-benzylpyrrolidinyl]amino}carbonyl)amino]methyl}-6-[(2,2-diphenylethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

(2*S*,3*S*,4*R*,5*R*)-5-(6-{[2,2-bis(4-chlorophenyl)ethyl]amino}-2-{[({[2-(diisopropylamino)ethyl]amino}carbonyl)amino]methyl}-9*H*-purin-9-yl)-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

N-({6-{[2,2-bis(4-chlorophenyl)ethyl]amino}-9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-9*H*-purin-2-yl}methyl)-*N'*-[2-(diisopropylamino)ethyl]urea;

N-({6-{[2,2-bis(3-methylphenyl)ethyl]amino}-9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-9*H*-purin-2-yl}methyl)-*N'*-[2-(diisopropylamino)ethyl]urea;

N-({6-{[2,2-bis(3-chlorophenyl)ethyl]amino}-9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-9*H*-purin-2-yl}methyl)-*N'*-[2-(diisopropylamino)ethyl]urea;

N-({6-{[2,2-bis(3-methylphenyl)ethyl]amino}-9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-9*H*-purin-2-yl}methyl)-*N'*-[2-(diisopropylamino)ethyl]urea; and

(2*S*,3*S*,4*R*,5*R*)-5-{2-{[({[2-(Diisopropylamino)ethyl]amino}carbonyl)amino]methyl}-6-[(1-naphthylmethyl)amino]-9*H*-purin-9-yl}-*N*-ethyl-3,4-dihydroxytetrahydro-2-furancarboxamide;

and the pharmaceutically acceptable salts and solvates thereof.

26. A pharmaceutical composition including a compound of the formula (I) or a pharmaceutically acceptable salt or solvate thereof, as defined in any one of the preceding claims, together with a pharmaceutically acceptable excipient, diluent or carrier.

27. A compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for use as a medicament.

improper mult dep

28. The use of a compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for the manufacture of a medicament to treat a disease for which an A2a receptor agonist is indicated.

29. The use of a compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for the manufacture of an anti-inflammatory agent.

30. The use of a compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for the manufacture of a medicament for the treatment of a respiratory disease.

31. Use as claimed in claim 30 where the disease is selected from the group consisting of adult respiratory distress syndrome (ARDS), bronchitis, chronic bronchitis, chronic obstructive pulmonary disease, cystic fibrosis, asthma, emphysema, bronchiectasis, chronic sinusitis and rhinitis.

32. The use of a compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for the manufacture of a medicament for the treatment of septic shock, male erectile dysfunction, hypertension, stroke, epilepsy, cerebral ischaemia, peripheral vascular disease, post-ischaemic reperfusion injury, diabetes, rheumatoid arthritis, multiple sclerosis, psoriasis, allergic dermatitis, eczema, ulcerative colitis, Crohns disease, inflammatory bowel disease, *Heliobacter pylori*-gastritis, non-*Heliobacter pylori* gastritis, non-steroidal anti-inflammatory drug-induced damage to the gastro-intestinal tract or a psychotic disorder, or for wound healing.

33. A compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for use as an A2a receptor agonist.

34. A compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for use as an anti-inflammatory agent.

35. A compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for use in the treatment of a respiratory disease.

36. A compound as claimed in claim 35 where the disease is selected from the group consisting of adult respiratory distress syndrome (ARDS), bronchitis, chronic bronchitis, chronic obstructive pulmonary disease, cystic fibrosis, asthma, emphysema, bronchiectasis, chronic sinusitis and rhinitis.

37. A compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively, for use in

the treatment of septic shock, male erectile dysfunction, hypertension, stroke, epilepsy, cerebral ischaemia, peripheral vascular disease, post-ischaemic reperfusion injury, diabetes, rheumatoid arthritis, multiple sclerosis, psoriasis, allergic dermatitis, eczema, ulcerative colitis, Crohns disease, inflammatory bowel disease, *Heliobacter pylori*-gastritis, non-*Heliobacter pylori* gastritis, non-steroidal anti-inflammatory drug-induced damage to the gastro-intestinal tract or a psychotic disorder, or for wound healing.

38. A method of treatment of a mammal, including a human being, to treat a disease for which an A2a receptor agonist is indicated, including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively.

39. A method of treatment of a mammal, including a human being, to treat an inflammatory disease, including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively.

40. A method of treatment of a mammal, including a human being, to treat a respiratory disease, including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively.

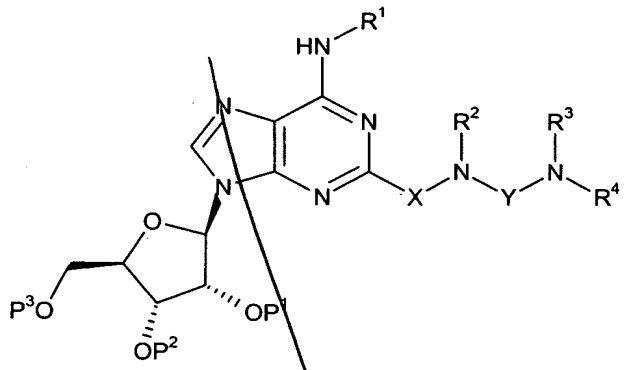
41. A method as claimed in claim 40 where the disease is selected from the group consisting of adult respiratory distress syndrome (ARDS), bronchitis, chronic bronchitis, chronic obstructive pulmonary disease, cystic fibrosis, asthma, emphysema, bronchiectasis, chronic sinusitis and rhinitis.

42. A method of treatment of a mammal, including a human being, to treat septic shock, male erectile dysfunction, hypertension, stroke, epilepsy, cerebral ischaemia, peripheral vascular disease, post-ischaemic reperfusion injury, diabetes, rheumatoid arthritis, multiple sclerosis, psoriasis, allergic dermatitis, eczema, ulcerative colitis, Crohns disease, inflammatory bowel disease, *Heliobacter pylori*-gastritis, non-*Heliobacter pylori* gastritis, non-steroidal anti-inflammatory drug-induced damage to the gastro-intestinal tract or a psychotic disorder, or for wound healing, including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as defined in any one of claims 1 to 25 and 26, respectively.

43. A process for the preparation of a compound of the formula (I), as defined in claim 1, or a pharmaceutically acceptable salt or solvate thereof, which includes

(a) deprotection of a compound of the formula

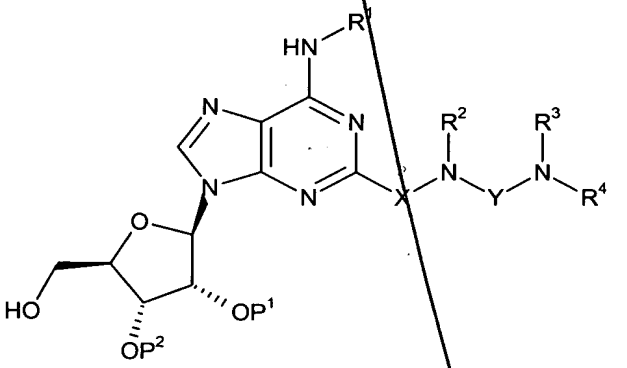
Subst A2



(III)

wherein R^1, R^2, R^3, R^4, X and Y are as defined in claim 1 and either P^1, P^2 and P^3, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group and P^3 is a protecting group, the protecting groups being removed together or sequentially; or

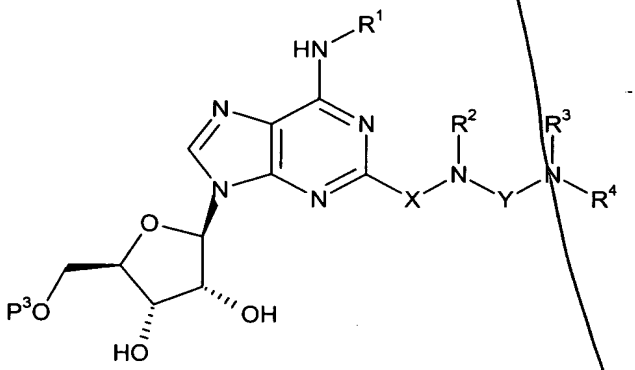
(b) deprotection of a compound of the formula



(IIIC)

wherein R^1, R^2, R^3, R^4, X and Y are as defined in claim 1 and either P^1 and P^2, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group, the protecting groups P^1 and P^2, when taken separately, being removed either together or sequentially; or

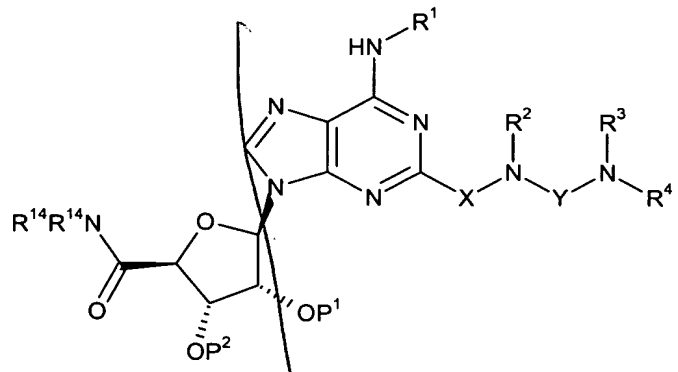
(c) deprotection of a compound of the formula



(IIID)

wherein P^3 is a protecting group and R^1, R^2, R^3, R^4, X and Y are as defined in claim 1; or

(d) deprotection of a compound of the formula

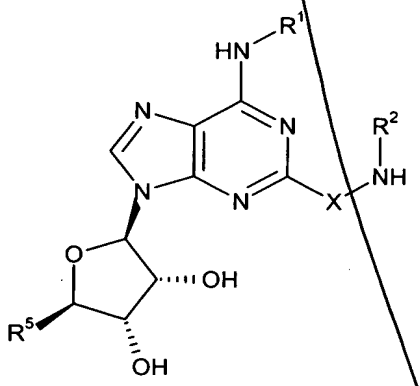


(II)

wherein R^1, R^2, R^3, R^4, R^{14}, X and Y are as defined in claim 1 and either P^1 and P^2, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group, the protecting groups P^1 and P^2, when taken separately, being removed either together or sequentially;

any one of said processes (a) to (d) being optionally followed by the conversion of the compound of the formula (I) to a pharmaceutically acceptable salt thereof.

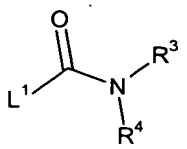
44. A process for the preparation of a compound of the formula (I), as defined in claim 1, or a pharmaceutically acceptable salt or solvate thereof, which includes the reaction of a compound of the formula



(XXXVIII)

wherein R^1, R^2, R^5 and X are as defined in claim 1 with

(a) a compound of the formula



(X)

wherein R^3 and R^4 are as defined in claim 1 and L^1 is a suitable leaving group, preferably imidazol-1-yl; or

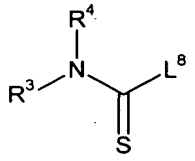
(b) a compound of the formula

$R^3R^4NSO_2L^9$ (XVII)

wherein R^3 and R^4 are as defined in claim 1 and L^9 is a suitable leaving group, preferably chloro; or

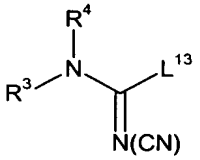
(c) a compound of the formula

wherein R^3 and R^4 are as defined in claim 1 and L^8 is a suitable leaving group, preferably methylthio or imidazol-1-yl; or



(XVI)

(d) a compound of the formula



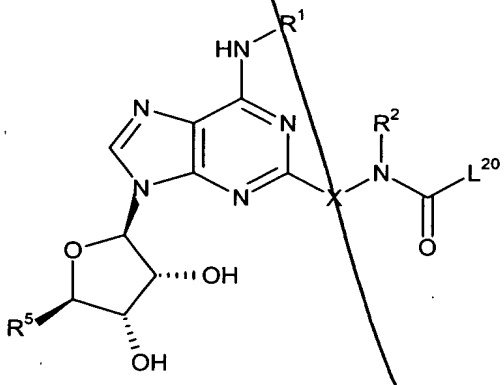
(XXI)

wherein R^3 and R^4 are as defined in claim 1 and L^{13} is a suitable leaving group, preferably methylthio;

said process being optionally followed by the conversion of the compound of the formula (I) to a pharmaceutically acceptable salt thereof.

45. A process for the preparation of a compound of the formula (I), as defined in claim 1, or a pharmaceutically acceptable salt or solvate thereof, which includes

(a) the reaction of a compound of the formula



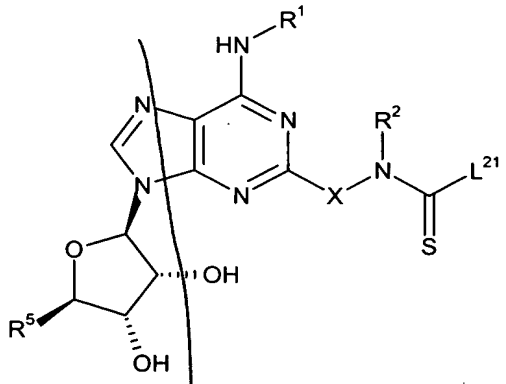
(XXXIX)

wherein R^1, R^2, R^5 and X are as defined in claim 1 and L^{20} is a suitable leaving group, preferably imidazol-1-yl, with a compound of the formula

R^3R^4NH (XI)

wherein R^3 and R^4 are as defined in claim 1; or

(b) the reaction of a compound of the formula



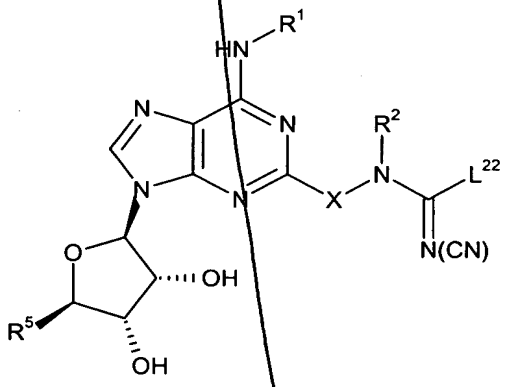
(XXXX)

wherein R^1, R^2, R^5 and X are as defined in claim 1 and L^{21} is a suitable leaving group, preferably methylthio or imidazol-1-yl, with a compound of the formula

R^3R^4NH (XI)

wherein R^3 and R^4 are as defined in claim 1; or

(c) the reaction of a compound of the formula



(XXXXI)

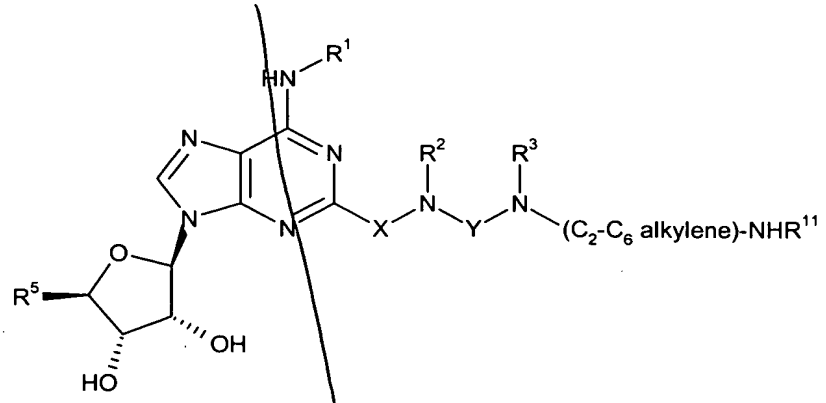
wherein R^1, R^2, R^5 and X are as defined in claim 1 and L^{22} is a suitable leaving group, preferably methylthio, with a compound of the formula

R^3R^4NH (XI)

wherein R^3 and R^4 are as defined in claim 1;

any one of said processes (a) to (c) being optionally followed by the conversion of the compound of the formula (I) to a pharmaceutically acceptable salt thereof.

46. A process for the preparation of a compound of the formula (I), as defined in claim 1, or a pharmaceutically acceptable salt or solvate thereof, which includes the acylation or suphonylation of a compound of the formula

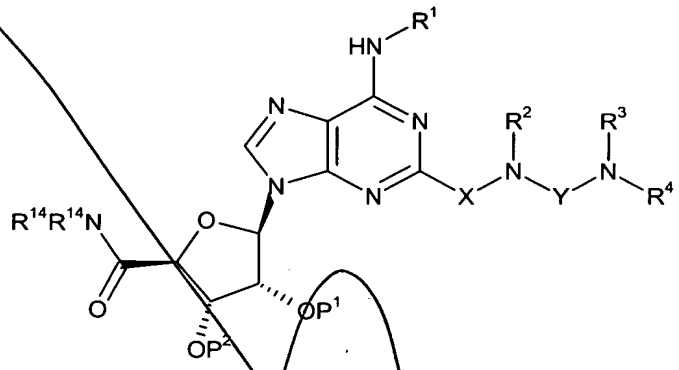


(XXXXXII)

wherein R^1, R^2, R^3, R^5, R^{11}, X and Y are as defined in claim 1;

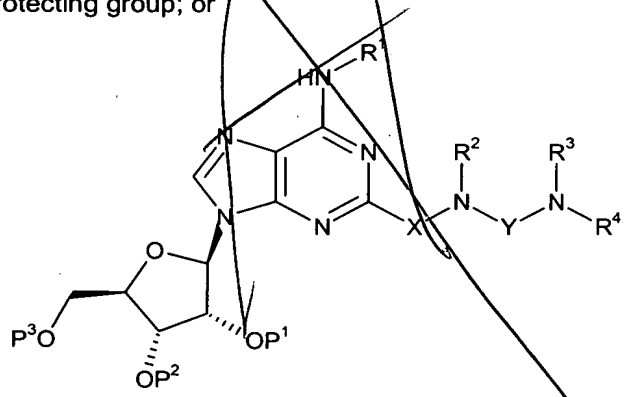
said process being optionally followed by the conversion of the compound of the formula (I) to a pharmaceutically acceptable salt thereof.

47. A compound of the formula



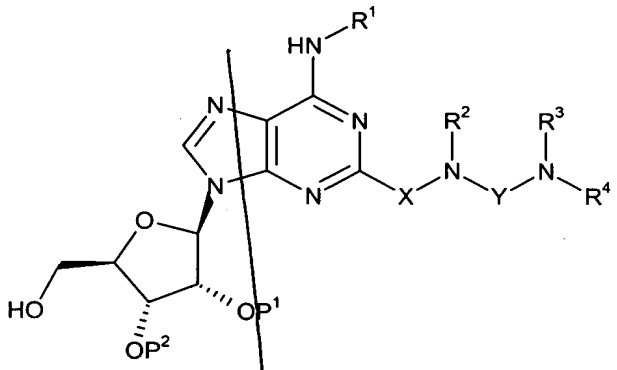
(II)

wherein P^1 and P^2 when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group; or



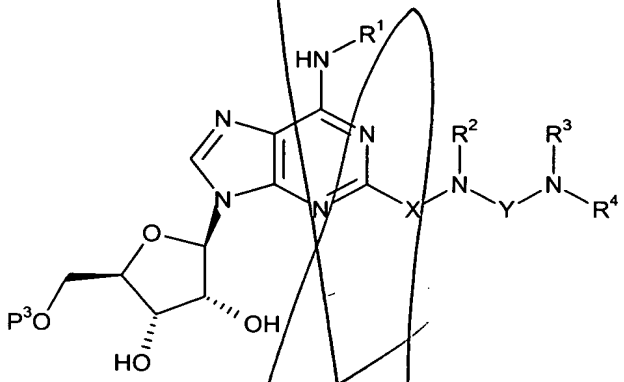
(III)

wherein either P^1, P^2 and P^3, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group and P^3 is a protecting group; or



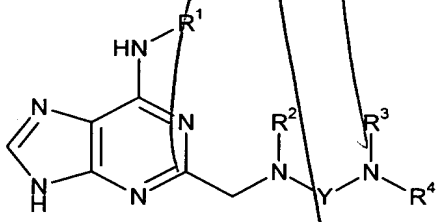
(IIIC)

wherein either P^1 and P^2, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group; or



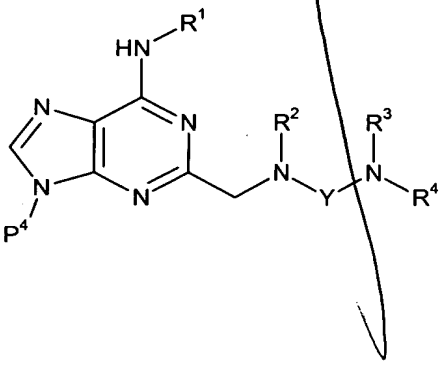
(IIID)

wherein P^3 is a protecting group; or

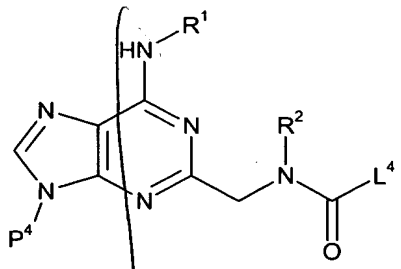


(IV); or

wherein P^4 is a protecting group; or

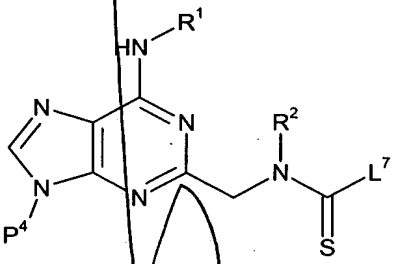


(VII); or



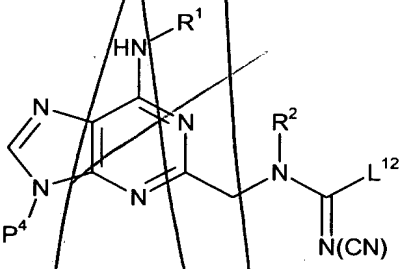
(XIII)

wherein L^4 is a suitable leaving group, preferably imidazol-1-yl, and P^4 is a protecting group; or



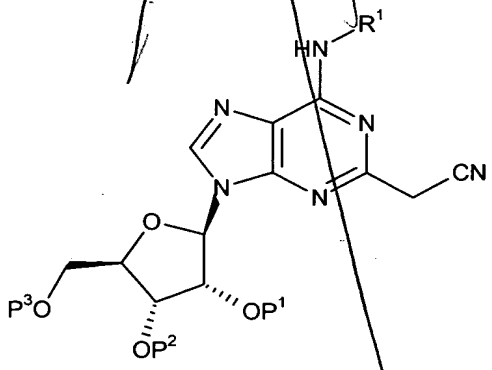
(XV)

wherein L^7 is a suitable leaving group, preferably methylthio or imidazol-1-yl, and P^4 is a protecting group; or



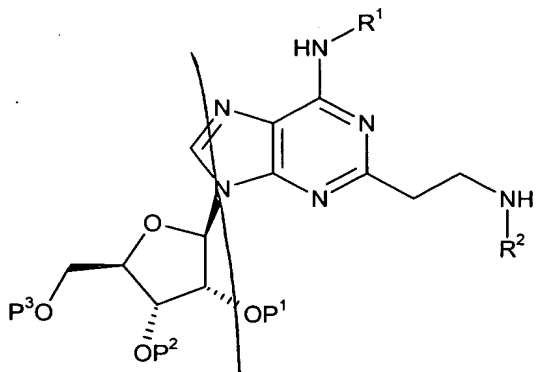
(XX)

wherein L^{12} is a suitable leaving group, preferably methylthio, and P^4 is a protecting group; or



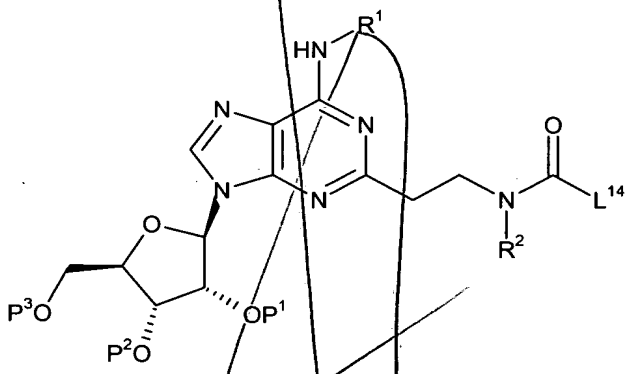
(XXIII)

wherein either P^1, P^2 and P^3, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group and P^3 is a protecting group; or



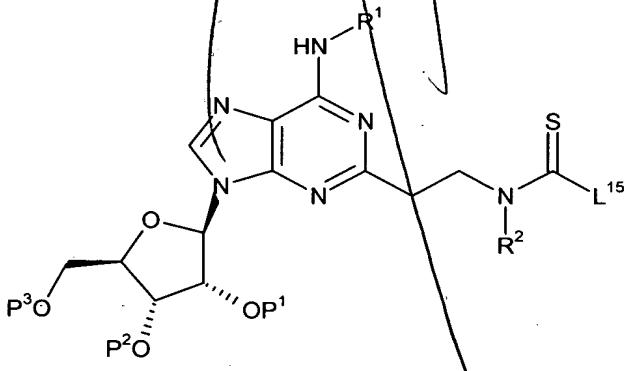
(XXII)

wherein either P^1, P^2 and P^3, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group and P^3 is a protecting group; or



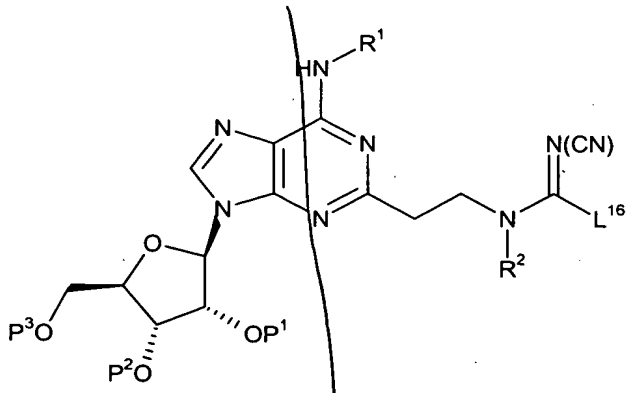
(XXVII)

wherein L^{14} is a suitable leaving group, preferably imidazol-1-yl, and either P^1, P^2 and P^3, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group and P^3 is a protecting group; or



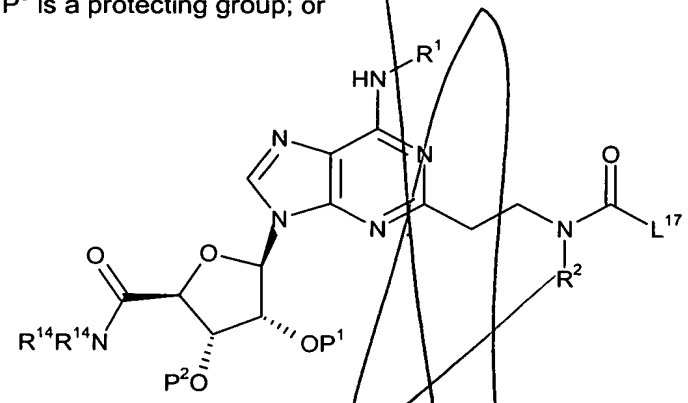
(XXVIII)

wherein L^{15} is a suitable leaving group, preferably methylthio or imidazol-1-yl, and either P^1, P^2 and P^3, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group and P^3 is a protecting group; or



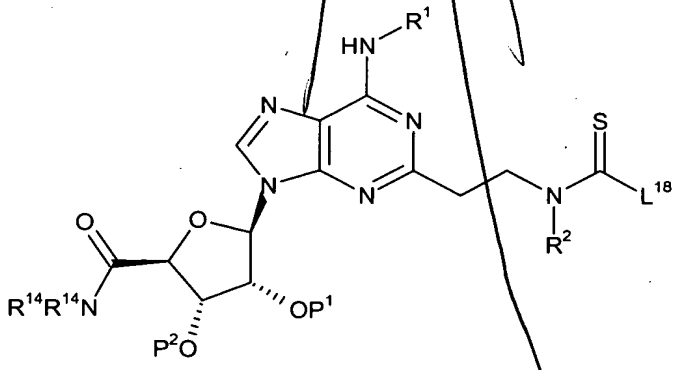
(XXIX)

wherein L^{16} is a suitable leaving group, preferably methylthio, and either P^1, P^2 and P^3, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group and P^3 is a protecting group; or



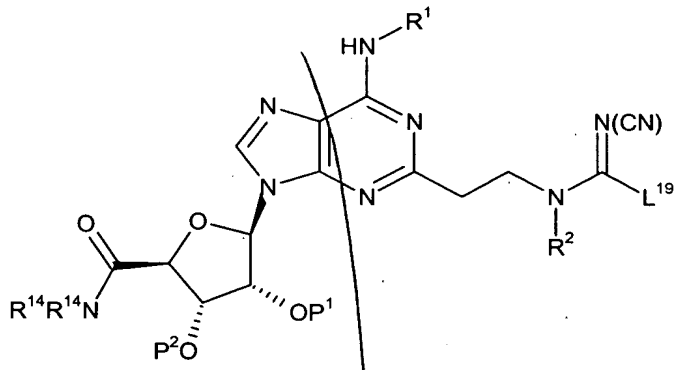
(XXXV)

wherein L^{17} is a suitable leaving group, preferably imidazol-1-yl, and either P^1 and P^2, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group; or



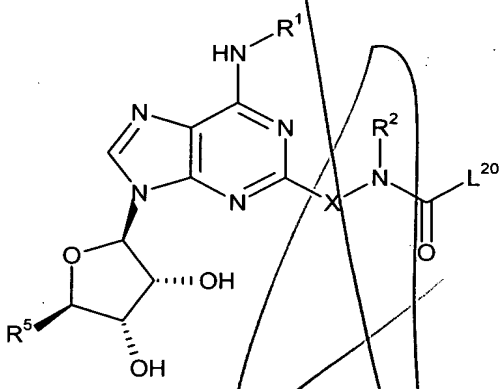
(XXXVI)

wherein L^{18} is a suitable leaving group, preferably imidazol-1-yl or methylthio, and either P^1 and P^2, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group; or



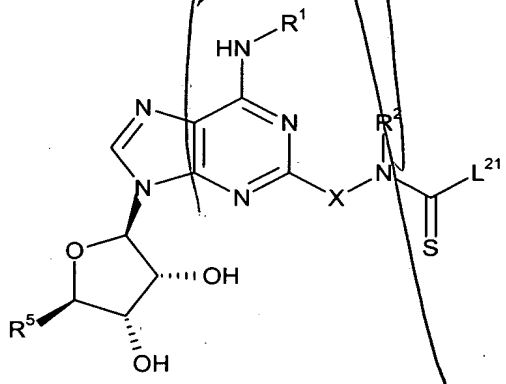
(XXXVII)

wherein L^{19} is a suitable leaving group, preferably methylthio, and either P^1 and P^2, when taken separately, are protecting groups or, P^1 and P^2, when taken together are a protecting group; or



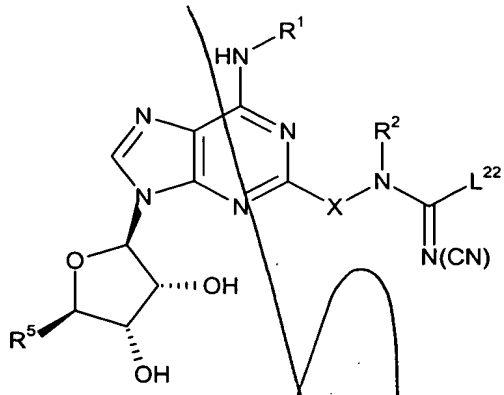
(XXXIX)

wherein L^{20} is a suitable leaving group, preferably imidazol-1-yl; or



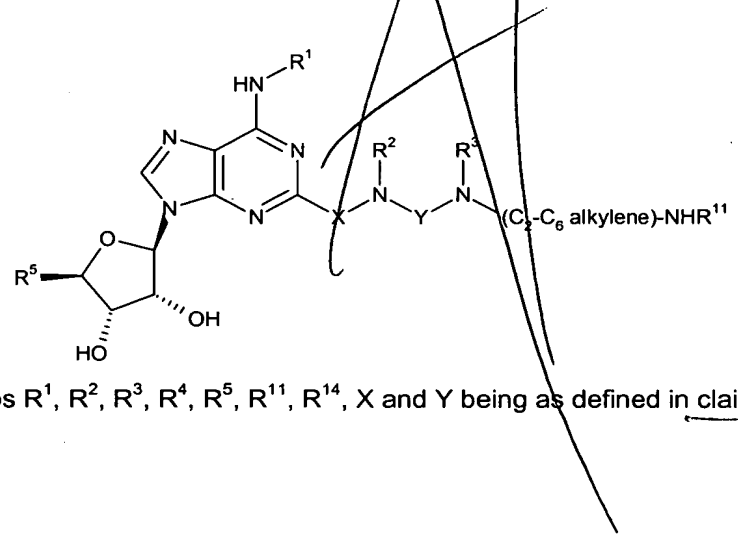
(XXXX)

wherein L^{21} is a suitable leaving group, preferably methylthio or imidazol-1-yl; or



(XXXXI)

wherein L^{22} is a suitable leaving group, preferably methylthio; or



(XXXXXII);

the groups R^1, R^2, R^3, R^4, R^5, R^{11}, R^{14}, X and Y being as defined in claim 1.